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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,179	04/13/2004	Yasuo Shibata	82696	3748
22242	7590	08/31/2004	EXAMINER	
FITCH EVEN TABIN AND FLANNERY 120 SOUTH LA SALLE STREET SUITE 1600 CHICAGO, IL 60603-3406			CHOI, WILLIAM C	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/823,179	Applicant(s) SHIBATA ET AL.	
	Examiner William C. Choi	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-62 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 35-37, 40-48 and 51-62 is/are rejected.
- 7) ☒ Claim(s) 38, 39, 49 and 50 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
- 2) ☒ Certified copies of the priority documents have been received in Application No. 09/953,796.
- 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>0804</u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0404</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Examiner's Comment

In the "Continuing Patent Application Transmittal" filed 4/13/2004, on page 4, item 17, it is indicated that claims 1-34 have been cancelled in the current application. However, it has not been elsewhere made of record by amendment, wherein these claims have been cancelled. Therefore, applicant is encouraged to make it clear of record in response to this action, the cancellation of the indicated claims and wherein claims 35-62 are the pending claims.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/953,796, filed on September 17, 2001.

Information Disclosure Statement

Receipt of the Information Disclosure Statement (IDS) with the copies of the references cited therein, was received on 4/13/2004. An initialized copy of the IDS is enclosed with this office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 46 (and dependent claim 47), 56 (and dependent claim 57), 59 (and dependent claim 60), 61 (and dependent claim 62) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, these claims disclose, "means for controlling the intensity of the input light" without specifically disclosing which of the first or second input lights is being controlled, thereby rendering these claims vague and indefinite. For purposes of examination, it was assumed that applicant meant the first input light. Claims 47, 57, 60 and 62 inherit the rejection from their parent claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 35-37, 40-48, 51-58, 59 and 60-62 are rejected under 35 U.S.C. 102(e) as being anticipated by Manning (U.S. 5,999,293).

In regard to claim 35, Manning discloses a light-controlled light modulator (column 1, lines 42-65, Figure 8) comprising: first optical branching means for branching first input light (Figure 8, "P2 branch"); optical branching-delaying means for branching and delaying second input light (column 6, lines 58-62, Figure 8, "branch between 834 and 833"); a first optical combiner/splitter for combining a first branched part of the first input light with a first branched part of the second input light (Figure 8, "coupling region of 'P1' and 'P2' before SOA 1"); phase modulators, which are connected to the plurality of ports (Figure 8, "SOA 1" and "SOA 2"), including media that vary their refractive indices in response to light intensity of the first input light (column 3, lines 30-33 and 54-56); and a second optical combiner/splitter for combining outputs from said phase modulators and for branching them to a plurality of ports, and for coupling them with a second branched part of the first input light and a second branched part of the second input light (Figure 8, "coupling region after 'SOA 1' and 'SOA 2' between 'P3' and 'P4'").

Regarding claim 36, Manning discloses wherein said first and second optical combiner/splitter and phase modulators constitute a symmetric Mach-Zehnder optical circuit (column 4, lines 7-10, Figure 3).

Regarding claims 37 and 48, Manning discloses wherein said optical branching-delaying means comprises a loop-type optical interferometer (column 6, lines 58-62, Figure 8, "branch between 834 and 833").

Regarding claims 40 and 51, Manning discloses wherein said modulator further comprises a plurality of controllers for controlling states of said phase modulators (column 1, lines 42-65, re "control signals").

Regarding claims 42 and 53, Manning discloses wherein the media of said phase modulators have a cross section that varies along a propagation direction of light (column 5, lines 32-50, Figure 6).

Regarding claims 46, 56, 59 and 61, the modulator of Manning will inherently comprise a means for controlling the intensity of the input light, this being reasonably assumed from Manning disclosing wherein the magnitude of the phase shift is determined by the intensity of the optical control pulses and that it is necessary to provide a differential phase shift of π (column 3, lines 52-57).

Regarding claims 41, 43, 44, 45, 52, 54, 55 and 58, Manning discloses wherein semiconductor optical amplifiers are used as said phase modulators (column 4, lines 10-19, Figure 3, "SOA 1" and "SOA 2").

Regarding claims 47, 57, 60 and 62, Manning discloses wherein said means for controlling the intensity of the input light comprises an optical amplifier with a gain control function (column 1, lines 55-65).

Allowable Subject Matter

Claims 38, 39, 49 and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claims 38, 39, 49 and 50: a light-controlled light modulator as claimed, specifically

wherein a length of said media is shorter than a difference between a first length and a second length, the first length and second lengths being equal to lengths from said branching-delaying means to said phase modulators as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (571) 272-2324. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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W-C

William Choi
Patent Examiner

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August 18, 2004

A handwritten signature in cursive script, appearing to read "Georgia Epps".

Georgia Epps
Supervisory Patent Examiner
Technology Center 2800